CLAIMS

1. A method of manufacturing an oxide superconducting wire, comprising:

a step (S1, S2) of preparing a wire formed by covering raw material powder of an oxide superconductor with a metal; and

a heat treatment step (S4, S6) of heat-treating said wire in a pressurized atmosphere having a total pressure of at least 1 MPa and less than 50 MPa in the heat treatment, wherein

pressurization is started from a temperature reducing 0.2 % yield strength of said metal (3) below said total pressure in said heat treatment at a heat-up time before the heat treatment in said heat treatment step (S4, S6).

2. The method of manufacturing an oxide superconducting wire according to claim 1, wherein

the speed of said pressurization is at least 0.05 MPa/min.

3. The method of manufacturing an oxide superconducting wire according to claim 2, wherein

the speed of said pressurization is at least 0.1 MPa/min.

4. The method of manufacturing an oxide superconducting wire according to claim 1, wherein

said heat treatment step (S4, S6) is carried out in an oxygen atmosphere, with a partial oxygen pressure of at least 0.003 MPa and not more than 0.02 MPa.

5. The method of manufacturing an oxide superconducting wire according to claim 1, wherein

said raw material powder of said oxide superconductor includes a Bi2223 phase,

and

said wire is annealed in an oxygen-containing atmosphere of a temperature of at least 300°C and not more than 600°C in said heat treatment step (S4, S6).

6. The method of manufacturing an oxide superconducting wire according to claim 1, further comprising a step (S2a) of twisting said wire in advance of said heat treatment step (S4, S6).

7. The method of manufacturing an oxide superconducting wire according to claim 1, wherein

said wire is not rolled.

8. The method of manufacturing an oxide superconducting wire according to claim 1, wherein

a wire formed by covering a ceramic-covered rod (22), obtained by covering said raw material powder (25) with ceramic (21), with said metal (3c) is prepared in said step (S1 to S2) of preparing said wire.

9. The method of manufacturing an oxide superconducting wire according to claim 1, further comprising a step (S5a) of molding said wire into a coil in advance of said heat treatment step (S4, S6).

10. The method of manufacturing an oxide superconducting wire according to claim 1, wherein

said wire is held under a decompressed atmosphere before said pressurization in said heat treatment step (S4, S6) is started.

11. A method of manufacturing an oxide superconducting wire, comprising:

a step (S1, S2) of preparing a wire formed by covering raw material powder of an oxide superconductor with a metal including silver; and

a heat treatment step (S4, S6) of heat-treating said wire in a pressurized atmosphere having a total pressure of at least 1 MPa and less than 50 MPa in the heat treatment, wherein

pressurization is started after the temperature of said atmosphere exceeds 400°C at a heat-up time before the heat treatment in said heat treatment step (S4, S6).

12. The method of manufacturing an oxide superconducting wire according to claim 11, wherein

said pressurization is started after the temperature of said atmosphere exceeds 600°C at the heat-up time before the heat treatment in said heat treatment step (S4, S6).

13. A method of modifying an oxide superconducting wire, comprising a heat treatment step (S4, S6) of heat-treating an oxide superconducting wire (1) formed by covering an oxide superconductor (2) with a metal (3) in a pressurized atmosphere having a total pressure of at least 1 MPa and less than 50 MPa in the heat treatment, wherein

pressurization is started from a temperature reducing 0.2 % yield strength of said metal below said total pressure in said heat treatment at a heat-up time before the heat treatment in said heat treatment step (S4, S6).

14. The method of modifying an oxide superconducting wire according to claim 13, wherein

the speed of said pressurization is at least 0.05 MPa/min.

15. The method of modifying an oxide superconducting wire according to claim 14, wherein

the speed of said pressurization is at least 0.1 MPa/min.

16. The method of modifying an oxide superconducting wire according to claim 13, wherein

said heat treatment step (S4, S6) is carried out in an oxygen atmosphere, with a partial oxygen pressure of at least 0.003 MPa and not more than 0.02 MPa.

17. The method of modifying an oxide superconducting wire according to claim 13, wherein

said oxide superconducting wire (1) includes a Bi2223 phase, and

said oxide superconducting wire (1) is annealed in an oxygen-containing atmosphere of a temperature of at least 300°C and not more than 600°C in said heat treatment step (S4, S6).

18. The method of modifying an oxide superconducting wire according to claim 13, wherein

said oxide superconducting wire (1) is held under a decompressed atmosphere before said pressurization in said heat treatment step (S4, S6) is started.

19. A method of modifying an oxide superconducting wire, comprising a heat treatment step (S4, S6) of heat-treating a wire formed by covering an oxide superconducting wire (2) with a metal (3) including silver in a pressurized atmosphere having a total pressure of at least 1 MPa and less than 50 MPa in the heat treatment, wherein

pressurization is started after the temperature of said atmosphere exceeds 400°C at a heat-up time before the heat treatment in said heat treatment step (S4, S6).

20. The method of modifying an oxide superconducting wire according to claim 19,

wherein

said pressurization is started after the temperature of said atmosphere exceeds 600°C at the heat-up time before said heat treatment in said heat treatment step (S4, S6).

21. An oxide superconducting wire (1), comprising an oxide superconductor (2) having a sintering density of at least 95%.

22. The oxide superconducting wire (1) according to claim 21, wherein

said oxide superconductor (2) has said sintering density of at least 99%.